

ABSTRACT

The present invention relates to compositions and methods for detecting very low concentrations of a molecule in a mixture. The detection of the molecule comprises the steps of first contacting a sample with a multispecific molecule capable of binding at least two molecules including the molecule to be detected, wherein the molecule to be detected is bound by the multispecific molecule thereby forming a complex, and second contacting the complex with a second, different molecule which is linked via a polymer to multiple detection signaling molecules. The invention may also be practiced by administration of the multispecific molecule *in vivo*, to a host for the molecule to be detected, either with or without the bound polymer probe and thereafter, respectively, either detecting the signaling molecule on the probe, or administering the probe and allowing it to bind the multispecific molecule, followed by detection of the signaling molecule on the probe.